

## THE WEATHER OF THE ATLANTIC AND PACIFIC OCEANS

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## NORTH ATLANTIC OCEAN

*The pressure situation.*—The center of low pressure over the North Atlantic Ocean during December 1933 occurred in the northwestern portion. Julianehaab, Greenland, had an average pressure of 29.27 inches. The lowest pressure reading of the month, 28.40 inches, occurred there on the 26th. The daily centers of activity were for the greater part confined to northern and western waters, except that during the last decade cyclonic conditions spread eastward and during the last few days of the month overlay western European waters. At sea the lowest pressure recorded was 28.54 inches, read on the Swedish motorship *Blankaholm*, in 49°17' N., 47°58' W., on December 1. A reading of 28.55 inches was made on the Dutch steamer *Laertes* in 47°50' N., 36°00' W., on the 20th.

Anticyclonic conditions prevailed for the most part over the lower temperate waters, but the crest of high pressure lay in the neighborhood of the Azores (average pressure at Horta, 30.21 inches). The highest barometer reading along the North Atlantic coast during the month was 30.98 inches, in southwestern Norway, on the 3d.

Average pressures along the coasts as a rule were abnormally high, but the abnormalities were slight, as noted in table 1, except over northeastern waters, where they were considerable; that at Lerwick showing a plus departure of 0.43 inch. Lisbon is the only station shown in the table that had a minus departure.

TABLE 1.—Averages, departures, and extremes of atmospheric pressure (sea level) at selected stations for the North Atlantic Ocean and its shores, December 1933

Station	Average pressure	Departure	Highest	Date	Lowest	Date
	Inches	Inch	Inches		Inches	
Julianehaab, Greenland	29.27		30.08	11	28.40	26
Reykjavik, Iceland	29.73	+0.26	30.44	5	29.07	1
Lerwick, Shetland Islands	30.15	+0.43	30.84	4	29.40	30
Valencia, Ireland	30.12	+0.18	30.57	3	29.15	28
Lisbon, Portugal	30.04	—07	30.58	23	29.57	14
Madeira	30.11	+02	30.49	24	29.55	11
Horta, Azores	30.21	+07	30.56	26, 27	29.80	20
Belle Isle, Newfoundland	29.77	+07	30.24	16	28.96	22
Halifax, Nova Scotia	29.97	+02	30.54	15, 26	29.10	27
Nantucket	30.05	00	30.72	29	29.34	21
Hatteras	30.17	+04	30.72	29	29.74	6
Bermuda	30.14	+02	30.38	16, 31	29.66	10
Turks Island	30.07	+04	30.18	18	29.94	9
Key West	30.13	+05	30.27	31	29.89	7
New Orleans	30.15	+02	30.47	29	29.71	6
Cape Gracias, Nicaragua	29.94	+02	30.00	11, 12	29.88	6

NOTE.—All data based on a.m. observations only, with departures, compiled from best available normals related to time of observations, except Hatteras, Key West, Nantucket, and New Orleans, which are 24-hour corrected means.

*Cyclones and gales.*—The fact that approximately 140 gale reports were furnished for December 1933 from the North Atlantic by seamen observers, is indicative of the considerable degree of storminess prevailing in these waters during the month. Major wind forces of 11 to 12 were reported as occurring on at least 9 days—the 1st, 3d, 5th, 10th, 11th, 12th, 19th, 20th, and 24th, while gales equaling at least force 10 were experienced on several other days, mostly along the northern steamer routes.

At the beginning of the month a deep cyclone lay east of Newfoundland, whence it moved gradually northward toward Greenland. During the 1st to 5th it affected a great portion of the northern routes, causing gales of force 8 to 12 from the American coast to the thirtieth meridian. On the 6th to 8th, the quietest period of the month, the low spread eastward and dissipated.

On the 4th a continental depression entered the ocean from the Virginia Capes, and on the 5th was causing locally fresh to strong gales between Nova Scotia and Bermuda.

On the 9th another cyclone appeared off the east coast of the United States, with fresh to strong gales between 30° and 40° N., to the westward of the 70th meridian, attending its development. The gale field on the 10th spread eastward as far as the 60th parallel and north to Newfoundland, where it continued through the 11th and 12th, with maximum wind forces of 11 and 12 experienced on all 3 days in the neighborhood of 38°–42° N., 55° to 63° W., and gales of lower velocity throughout Newfoundland waters.

Up to the 12th and 13th gales were of rare occurrence in European waters, but on these days winds of force 8 to 9 occurred from the English Channel southward into the Bay of Biscay and westward to the 15th meridian. Scattered gales of similar force were experienced in the same vicinity during the last few days of December, in connection with the first important cyclonic development of the month in this part of the eastern Atlantic.

From the 15th to 20th gales continued in the central Atlantic. The peak of extent and intensity occurred on the 19th, during which winds of force 9 to 11 were encountered over a considerable region between Bermuda and the Azores, and on the 20th, with winds of similar force—and in one instance of force 12—at some distance north of the Azores.

During the last decade gales were infrequent along the American coast, and the few reported included a strong gale near Cape Cod on the 26th, and fresh gales near Cape Hatteras and in the Florida Straits on the 29th and 31st, respectively. The highest velocity experienced for the period was of force 11, on the 24th, near 49½° N., 37° W.

On the 27th a cyclone centered near Labrador was productive of severe weather from Newfoundland waters southward to the fortieth parallel, and eastward to mid-ocean. The effect of this low, existing simultaneously with a storm center over the extreme eastern Atlantic, was that on the last 5 days of the month, gales occurred along the northern routes from the 60th meridian eastward to the European coast.

*Fog.*—Fog was somewhat more frequent along the American coast this month than in November. It occurred on 6 days along the New England coast; on 5 days thence southward to Cape Hatteras; and on 3 days in the northwestern part of the Gulf of Mexico. Over and near the Gulf Stream from 35° N. to the Grand Banks of Newfoundland fog was observed on 2 to 6 days in various 5° squares. East of longitude 45° W. fog was scattered and infrequent, except in the English Channel, where it was reported on 4 days.